REMARKS

Favorable consideration of the present application, as presently amended and in light of the following discussion, is respectfully requested.

Claims 1, 2 and 5-10 are presently pending in this application, Claims 1 and 2 having been withdrawn from consideration by the Examiner, and Claims 5-10 having been amended by this preliminary amendment.

In the outstanding Office Action, Claims 5-10 were rejected under 35 U.S.C. §112, first paragraph, as being not enabling to one skilled in the art; Claims 5-10 were rejected under 35 U.S.C. §112, second paragraph, as being indefinite; Claims 5 and 7 were rejected under 35 U.S.C. §102(b) as being anticipated by Fellows et al. (U.S. Patent 4,790,465); Claim 6 was rejected under 35 U.S.C. §103(a) as being unpatentable over Fellows et al. in view of Logan et al. (U.S. Patent 4,262,417); and Claims 8-9 were rejected under 35 U.S.C. §103(a) as being unpatentable over Fellows et al. in view of Marks (U.S. Patent 3,783,726).

First, a new title for the subject invention as suggested by the Examiner has been submitted herein. No further objection on this issue is therefore anticipated.

With regard to the rejection of Claims 5-10 under 35 U.S.C. §112, first and second paragraphs, Claim 5 has been amended to clarify its subject matter, i.e., *moving the cutting blade having a blade thickness α (mm) at a speed β (mm/minute) during the cutting, wherein $0 < \beta \leq -253\alpha + 65$ (mm/minute)*, and is believe to maintain the same scope without adding new matter. The outstanding Office Action asserts that because the operative range of α is not disclosed, the equation, $\beta \leq -253\alpha + 65$ (mm/minute), is not enabling and indefinite to one ordinarily skilled in the art based on the assumption that speed is a scalar component and thus does not have a direction. However, Claim 5 as amended herein recites that "moving the

cutting blade having a blade thickness α (mm) though the optical fiber at a speed β (mm/minute) during the cutting, wherein $0 < \beta \leq -253\alpha + 65$ (mm/minute)." Therefore, Applicants respectfully submit that Claim 5 enables one ordinarily skilled in the art to make and use the subject invention recited therein and that Claim 5 is in compliance with 35 U.S.C. §112, first and second paragraphs.

Briefly, Claim 5 of the present invention is directed to a method for cutting an optical fiber, for completely cutting the optical fiber by moving a cutting blade across the optical fiber, including moving the cutting blade having a blade thickness α (mm) at a speed β (mm/minute) during the cutting, wherein $0 < \beta \leq -253\alpha + 65$ (mm/minute). By moving the cutting blade at a speed ascertained based on its correlation to the blade thickness of the cutting blade, stress on the cutting blade is decreased during cutting, thereby keeping the cutting blade sharp for a longer period.[1] Moreover, by incising an optical fiber at a speed determined based upon the equation, $0 < \beta \leq -253\alpha + 65$ (mm/minute), optical fibers with smooth end surfaces sufficient for high operability can be obtained while an early deterioration of the cutting blade is prevented.[2]

Fellows et al. disclose a method for cleaving optical fibers. Nevertheless, Fellows et al. do not teach moving the cutting blade having a blade thickness α (mm) at a speed β (mm/minute) during the cutting, wherein $0 < \beta \leq -253\alpha + 65$ (mm/minute). On the contrary, Fellows et al. disclose a method of *cleaving* an optical fiber by partly cutting the optical fiber and tensioning it on both end sides, not *cutting* an optical fiber by crossing a blade across the optical fiber. Further, Fellows et al. disclose how to cleave an optical fiber by superimposing

---

[1] Specification, page 4, lines 7-11 and lines 21-24.

[2] Id. page 6, lines 18-22.

oscillation upon the movement of the blade, thereby moving the blade back and forth, i.e., toward and away, from the optical fiber during its cleaving process.[3] In addition, a moving speed of the blade disclosed in Fellows et al. is the moving speed when the blade approaches to the optical fiber, not a moving speed at the cutting of the optical fiber.[4] Besides, nowhere does Fellows et al. disclose how fast the blade must move based upon its blade thickness during incision. Therefore, the method recited in Claim 5 is clearly distinguishable from Fellows et al.

Logan et al. disclose a tool for cleaving fiber optic elements but do not teach moving the cutting blade having a blade thickness α (mm) at a speed β (mm/minute) during the cutting, wherein $0 < \beta \leq -253\alpha + 65$ (mm/minute). Instead, Logan et al. merely disclose how to form a groove in the entire circumference of an optical fiber by using a heated wire tip during their grooving step and how to apply stress around the groove, thereby tearing the optical fiber at the groove.[5] Therefore, the method recited in Claim 5 is distinguishable from Logan et al.

Marks simply discloses a wire cutting apparatus and does not teach a method for cutting an optical fiber by moving a cutting blade having a blade thickness α (mm) at a speed β (mm/minute) during the cutting, wherein $0 < \beta \leq -253\alpha + 65$ (mm/minute). Thus, the method recited in Claim 5 is clearly distinguishable from Marks.

For the foregoing reasons, Claim 5 is believed to be allowable. Furthermore, because Claims 6-10 ultimately depend from Claim 5, substantially the same arguments set forth

---

[3] Id. column 2, line 44 to column 3, line 29.

[4] See Fellows et al., column 2, lines 60-65.

[5] Logan et al., column , lines 1-8.

above also apply to these dependent claims. Thus, Claims 6-10 are believed to be allowable as well.

In view of the amendment and the discussions presented above, it is respectfully submitted that the present application is in condition for allowance, and an early action favorable to that effect is earnestly solicited.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,
MAIER & NEUSTADT, P.C.

22850

Tel: (703) 413-3000
Fax: (703) 413-2220
GJM/RTP/AY:jmr
I:\atty\Aky\0s\0041\00410619.pre-ame-cpa.wpd

Gregory J. Maier
Registration No. 25,599
Robert T. Pous
Registration No. 29,099
Attorneys of Record

Marked-Up Copy
Serial No: **09/160,581**
Amendment Filed on:
09-28-01

IN THE CLAIMS

Please amend Claims 5-10 as follows:

--5. (Amended) A method for cutting an optical fiber, for completely cutting the optical fiber by moving a cutting blade across the optical fiber, comprising [the] a step of moving [a] the cutting blade having a blade thickness α (mm) at a speed β (mm/minute) during the cutting,

wherein $0 \leq \beta \leq -253\alpha + 65$ (mm/minute).

6. (Amended) A [The] method [of] for cutting an optical fiber according to Claim 5, further comprising [the] a step of heating said cutting blade.

7. (Amended) A [The] method [of] for cutting an optical fiber according to Claim 5, wherein said cutting blade is moved by an optical fiber cutting apparatus including a cutting blade holder configured to hold and to move said cutting blade to a cutting position, an optical fiber supporter configured to support the optical fiber such that said cutting blade is perpendicular to the optical fiber at the cutting position, a speed reducing device configured to reduce and to transmit drive force, and a drive force transmission device configured to transmit the drive force from said speed reducing device to said cutting blade holder.

8. (Amended) A [The] method [of] for cutting an optical fiber according to Claim 7, wherein said drive force is provided by a motor.

9. (Amended) A [The] method [of] for cutting an optical fiber according to Claim 8, wherein said speed reducing device comprises a plurality of speed reducing gears configured to reduce a rotational speed of said motor.

10. (Amended) A [The] method [of] for cutting an optical fiber according to Claim 9, wherein said drive force transmission device comprises a cam configured to rotate along with a rotation of said plurality of speed reducing gears and a cam follower configured to move in a rectilinear direction along with a rotation of said cam.--